

ABSTRACT

The invention is directed to a system for adaptively re-aligning a modulated output signal having an error component by generating a reference phase signal using a phase input signal; generating a sample phase signal from the output signal; comparing the reference and sample signals; and adaptively re-aligning any difference between the reference and sample signals to substantially reduce the error component. The invention may incorporate a sampling circuit for sampling the output signal to generate the sample signal; a digital phase locked loop for combining the phase input signal with a carrier wave to generate the reference signal and comparing them to generate a phase error signal; a reference filter for generating reference phase error information; a combining circuit for combining the phase error signal with the reference phase error information to generate a correction signal; and an adaptive gain control circuit for adaptively controlling gain in the correction signal to generate a final estimated error used to re-align the output signal with the phase input signal.